

**Amendments to the Claims:**

This listing of claims replaces all prior versions, and listings, of claims in this application.

**Listing of Claims:**

1. (Currently Amended) In an air/ground communication environment in which a control site communicates with a plurality of aircraft via a plurality of ground stations, wherein each of the plurality of aircraft is in radio communication with at least one of the plurality of ground stations, and the plurality of ground stations and the plurality of aircraft share a common air/ground communication channel, a method of allocating transmission time slots to the plurality of ground stations, the method comprising:

(a) building a transmission time slot schedule containing a transmission time slot allocation for at least one of the plurality of ground stations; and

(b) distributing the transmission time slot schedule from the control site to at least one of the plurality of ground stations;

wherein a ground station that receives a time slot allocation assumes management over use of transmission time slots allocated to the ground station by the transmission time slot schedule, and

wherein the transmission time slot schedule allocates VDL management time slots.

2. (Cancel)

3. (Original) The method of claim 1, wherein a count of transmission time slots allocated to one of the plurality of ground stations in the transmission time slot schedule is based, at least in part, upon a count of the plurality of ground stations.

4. (Original) The method of claim 1, wherein a count of transmission time slots allocated to one of the plurality of ground stations in the transmission time slot schedule is based, at least

in part, upon a count of aircraft for which said one of the plurality of ground stations has polling authority.

5. (Original) The method of claim 1, wherein a count of transmission time slots allocated to one of the plurality of ground stations in the transmission time slot schedule is based, at least in part, upon a volume of communication traffic supported by said one of the plurality of ground stations.

6. (Original) The method of claim 1, wherein the control site periodically rebuilds and redistributes the transmission time slot schedule to at least one of the plurality of ground stations.

7-17. (Cancel)

18. (Currently Amended) In an air/ground communication environment in which a control site communicates with a plurality of aircraft via a plurality of ground stations, a method of scheduling air to ground data communication from the plurality of aircraft to the control site, the method comprising:

(a) receiving at the control site an inbound data slot request from one of the plurality of aircraft via one of the plurality of ground stations;

(b) storing in an information base at the control site information received in a plurality of inbound data slot requests;

(c) assessing at the control site information stored in the information base received in the plurality of inbound data slot requests; and

(d) transmitting, based upon the assessment, an inbound reservation from the control site to a specific aircraft via one of the plurality of ground stations that identifies a time slot that the aircraft is permitted to use to transmit data to the control site via the plurality of ground stations, wherein the information base contains information pertaining to each inbound data slot request received, the information including at least one of:

a unique identifier of the aircraft making the request; and  
a priority associated with the data to be transmitted.

19. (Cancel)

20. (Currently Amended) The method of claim 18, wherein step (c) includes a consideration of at least one of:

a number of pending inbound data requests;  
a priority of the pending inbound data requests;  
a volume of pending outbound data; and  
a priority of the pending outbound data.

21-22. (Cancel)

23. (Currently Amended) An air/ground communication system that supports communication with a plurality of aircraft, the system comprising:

a plurality of ground stations, wherein each of the plurality of aircraft is in radio communication with at least one of the plurality of ground stations and wherein the plurality of aircraft share a common air/ground communication channel with the plurality of ground stations;

a control site, in communication with the plurality of ground stations, that allocates a plurality of time slots used by the plurality of ground stations to share the common air/ground communication channel and to support communication between the plurality of aircraft and the control site,

wherein the control site maintains an information base containing a plurality of unique aircraft addresses and status information associated with each of the plurality of unique aircraft addresses;

wherein the control site delegates authority to assign at least one of the plurality of unique aircraft addresses to at least one of the plurality of ground stations; and

wherein the control site updates the status information associated with each of the plurality of unique aircraft addresses based upon information contained in a message received from at least one of the plurality of ground stations.

24. (Original) The system of claim 23, wherein the control site builds a transmission time slot schedule containing a transmission time slot allocation for at least one of the plurality of ground stations and distributes the transmission time slot schedule to at least one of the plurality of ground stations; and

wherein a ground station that receives a time slot allocation assumes management over use of transmission time slots allocated to the ground station by the transmission time slot schedule.

25. (Cancel)

26. (Currently Amended) The system of claim 23, wherein the control site receives a poll response report from a first ground station and a poll response report from a second ground station, wherein each of the poll response reports contains a time of arrival (TOA) of a poll response at each of the first and second ground stations, respectively;

wherein the control site transmits a handover command, to the first ground station and to the second ground station, that transfers polling responsibility from the first ground station to the second ground station based upon an assessment by the control site of TOA values contained in the respective poll response reports.

27. (Original) The system of claim 23, wherein the control site receives from at least one of the plurality of ground stations a message that includes at least one of a ground station identifier, a unique aircraft identifier, a unique message identifier, a signal time of arrival (TOA) at the receiving ground station and signal quality information, as determined by the receiving ground station; and

wherein the control site selects a preferred ground station for use by the control site to transmit signals to or to receive signals from a specific aircraft based upon the information received.

28. (Original) The system of claim 23, wherein the control site receives an inbound data slot request from one of the plurality of aircraft via one of the plurality of ground stations; and wherein the control site transmits, based at least in part upon an assessment of the data slot request received, an inbound reservation to a specific aircraft via one of the plurality of ground stations that identifies a time slot that the aircraft is permitted to use to transmit data to the control site via the plurality of ground stations.

29. (Original) The system of claim 23, wherein more than one of the plurality of ground stations receives a signal originating from one of the plurality of aircraft;

wherein each of the plurality of ground stations receiving the signal relays the signal, a time of arrival (TOA) of the incoming signal at the ground station, and signal quality information determined by the ground station, to the control site;

wherein the control site determines, based upon TOA and incoming signal quality information, a preferred ground station via which to receive the incoming signal; and

wherein the control site permits the preferred ground station to forward the incoming signal received to a control site communication switch.

30. (Currently Amended) An air/ground communication system that supports communication between a control site and a plurality of aircraft, the system comprising:

a plurality of ground stations, wherein each of the plurality of aircraft is in radio communication with at least one of the plurality of ground stations and wherein the plurality of aircraft share a common air/ground communication channel with the plurality of ground stations;

wherein the control site, in communication with the plurality of ground stations, allocates a plurality of time slots used by the plurality of ground stations to share the common air/ground

communication channel and to support communication between the plurality of aircraft and the control site,

wherein at least one of the plurality of ground stations sends a poll response report to the control site upon receiving a poll response from an aircraft wherein the poll response report contains a time of arrival (TOA) of a poll response at the ground station; and

wherein a ground station receives a handover command from the control site based upon an assessment of TOA values contained in the poll response reports received.

31. (Original) The system of claim 30, wherein at least one of the plurality of ground stations receives a transmission time slot schedule from the control site containing a transmission time slot allocation for at least one of the plurality of ground stations; and

wherein a ground station that receives a time slot allocation assumes management over use of transmission time slots allocated to the ground station by the transmission time slot schedule.

32. (Original) The system of claim 30, wherein at least one of the plurality of ground stations is delegated authority from the control site to assign at least one of a plurality of unique aircraft addresses;

wherein at least one of the plurality of ground stations maintains a local information base containing the plurality of delegated unique aircraft addresses and status information associated with at least one of the plurality of delegated unique aircraft addresses;

and

wherein at least one of the plurality of ground stations delegated unique aircraft addresses updates the status information associated with at least one of the plurality of unique aircraft addresses and sends a corresponding update message to the control site.

33. (Cancel)

34. (Original) The system of claim 30, wherein at least one of said plurality of ground stations upon receiving a message from an aircraft relays the received message to the control site and includes within the relayed message at least one of an identifier for the ground station, a unique aircraft identifier, a unique message identifier, and a signal time of arrival (TOA) at the receiving ground station and signal quality information, as determined by the receiving ground station.

35. (Original) The system of claim 30, wherein a ground station relays an inbound data slot request from an aircraft to the control site; and  
wherein the ground station receives and relays an inbound reservation from the control site to the aircraft that identifies a time slot that the aircraft is permitted to use to transmit data to the control site via the plurality of ground stations.

36. (Original) The system of claim 30, wherein at least one of the plurality of ground stations receives a signal originating from one of the plurality of aircraft;  
wherein each of the plurality of ground stations receiving the signal relays the signal, a time of arrival (TOA) of the incoming signal at the ground station, and signal quality information determined by the ground station, to the control site;  
wherein a preferred ground station, selected by the control site based upon the relayed TOA and incoming signal quality information, is permitted to forward the incoming signal received to a control site communication switch.

37. (Currently Amended) An air/ground communication system that supports communication with a plurality of aircraft via a plurality of ground stations, wherein each of the plurality of aircraft is in radio communication with at least one of the plurality of ground stations and wherein the plurality of aircraft share a common air/ground communication channel with the plurality of ground stations, the system comprising:

a control site, in communication with the plurality of ground stations, that allocates time slots used by the plurality of ground stations to share the common air/ground communication channel and coordinate communication between the plurality of aircraft and the control site,

wherein the control site receives from at least one of the plurality of ground stations a message that includes at least one of a ground station identifier, a unique aircraft identifier, a unique message identifier, a signal time of arrival (TOA) at the receiving ground station and signal quality information as determined by the receiving ground station; and

wherein the control site selects a preferred ground station for use by the control site to transmit a signal to or to receive a signal from a specific aircraft based upon the information received, and

wherein the control site selects a preferred ground station based upon TOA and incoming signal quality information to forward an incoming signal received to a control site communication switch.

38. (Original) The system of claim 37, wherein the control site builds a transmission time slot schedule containing a transmission time slot allocation for at least one of the plurality of ground stations and distributes the transmission time slot schedule to at least one of the plurality of ground stations.

39. (Original) The system of claim 37, wherein the control site maintains an information base containing a plurality of unique aircraft addresses and status information associated with each of the plurality of unique aircraft addresses;

wherein the control site delegates authority to assign at least one of the plurality of unique aircraft addresses to at least one of the plurality of ground stations; and

wherein the control site updates the status information associated with each of the plurality of unique aircraft addresses based upon information contained in a message received from at least one of the plurality of ground stations.



40. (Original) The system of claim 37, wherein the control site receives a poll response report from a first ground station and a poll response report from a second ground station, wherein each of the poll response reports contains a time of arrival (TOA) of a poll response at each of the first and second ground stations, respectively;

wherein the control site transmits a handover command, to the first ground station and to the second ground station, that transfers polling responsibility from the first ground station to the second ground station based upon an assessment by the control site of TOA values contained in the respective poll response reports.

41. (Cancel)

42. (Original) The system of claim 37, wherein the control site receives an inbound data slot request from one of the plurality of aircraft via one of the plurality of ground stations; and

wherein the control site transmits, based at least in part upon an assessment of the data slot request received, an inbound reservation to a specific aircraft via one of the plurality of ground stations that identifies a time slot that the aircraft is permitted to use to transmit data to the control site via the plurality of ground stations.

43. (Cancel)